If Data Is The New Oil, When Is The Extraction of Value From Data Unjust?

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Michele Loi and Paul-Olivier Dehaye

Data, it has been suggested, is the oil of the new economy.[1] In spite of the way the internet has changed people's lives, surprisingly little work has been done to link some of the normative issues explored in fields of inquiry such as "computer ethics"[2] or "information ethics"[3] with debates in a certain stream of political philosophy, which can perhaps be characterized as "analytical philosophy in the (post) Rawlsian tradition" – the sort of philosophy that is predominantly taught by most members of philosophy departments in the USA and UK. The present contribution attempts to build this link. We start with a question in the province of computer or information ethics, namely "when is the extraction of value from data unjust?", and provide an answer

[1] Perhaps the earliest occurrence of this claim dates back to 2007, in Michael Palmer, "Data Is the New Oil," *ANA Marketing Maestros*, November 3, 2006, http://ana.blogs.com/maestros/2006/11/data_is_the_new.html. The claim or some variation of it has been repeated countless times since, for instance see: "The World's Most Valuable Resource Is No Longer Oil, but Data," *The Economist*, May 6, 2017, http://www.economist.com/news/leaders/21721656-data-economy-demands-new-approach-antitrust-rules-worlds-most-valuable-resource.

[2] James H. Moor, "What Is Computer Ethics?," *Metaphilosophy* 16, no. 4 (October 1, 1985): 266–75.

[3] Luciano Floridi, *The Ethics of Information* (Oxford: Oxford University Press, 2013).

© 2017 – *Philosophy and Public Issues (New Series)*, Vol. 7, No. 2 (2017): 137-178
LUISS University Press
E-ISSN 2240-7987 | P-ISSN 1591-0660

which relies on concepts from Rawls's theory.

Although the argument here is driven by an analysis of two case studies (freedom of speech on digital platforms and the economics of big data) and for that reason may be classified as a paper in "applied philosophy" (whatever that means), we cannot avoid spending some words of the more "meta-theoretical" question of what type of concepts of political philosophy need to be invoked, in order to identify the normative facts at stake. In other words, we cannot simply take Rawls's two famous principles of justice and apply them to information and communication technology (ICT). Prior to doing that, it is absolutely essential to explain how the basic concepts of a Rawlsian theory of justice might apply to the social and technological domain in question. To do so, we must spend some words on the fundamental concepts of the Rawlsian analysis of social justice. Thus, a significant part of this paper is devoted to tackling questions of a more methodological, than practical, nature.

The paper consists of three sections: section 1, in which we explain why a certain entity enabled/constituted by a certain deployment of ICT infrastructure, namely the "dominant internet platform", is a subject of social justice in the Rawlsian sense; and section 2, in which we present Rawls's principles of justice as criteria to evaluate internet platforms, regarded as institutions, just or unjust. Finally, in section 3, we considers two case studies (communication over YouTube and Facebook and the economic exploitation of data by Google search) and analyze them from the point of view of Rawls's First and Second Principles of Justice.

I

Data is the new oil and the institution governing its extraction and transformation is the digital platform

The lead question in this paper is "when is the extraction of value from data just"? First of all let us consider the presupposition implicit in this claim: that data are analogous to raw material resources, which only acquire direct value in use, after they are extracted and processed in specific ways. Oil, for example, must be converted into plastic, chemicals, etc. Data, by analogy, must be "broken down" and "analyzed" to generate "insight". Insights that may be gleaned from data span across a wide variety of different area. In the business sphere, where the analysis of "big data" found one of the first realms of application,[4] data have been collected and analyzed for the sake of improving services and their delivery, or of personalized marketing. The infamous case of Target, which figured out a teen was pregnant from her shopping pattern, and alarmed her oblivious parents by sending personalized advertisement to her

[4] The concept of "big data" refers to data that are produced in very large quantities (*e.g.* not from a sample of the population of interest, but from the entire population) and are recorded in very short intervals, if not continuously. Finally, big data are often heterogeneous data, *e.g.* GPS data together with heart beat data. The main technological enabler of big data have been cloud services. The question "how big must be big data in order to count as big data?" does not have a clear answer. It is neither the sheer size of the data, nor whether or not they overcome the possibilities of analysis given at a specific technological stage, that defines this. Rather, what (most) people seem to have in mind when they talk about big data is a certain domain of applications, that only become possible when you are dealing with vast amount of data produced steadily, such as the identification of significant patterns, which may not be detectable with a lower quantity of data. See Luciano Floridi, "Big Data and Their Epistemological Challenge," *Philosophy & Technology* 25, no. 4 (December 1, 2012): 435–37.

home, testifies the power, as well as the risks, of such methods.[5] Other insights that can be gleaned from data concern mobility patterns (from GPS devices and cell phone data), health and wellness (from fitness devices of all kinds, including wearable health monitors), and epidemiology, such as detecting the early emergence of a disease, or monitoring the spatio-temporal evolution of anti-vaccination sentiment.[6]

Indeed, the centrality of *insight*, considered as the main value that technology adds to data, was already stated clearly in the first occurrence of the oil analogy on the web[7]. This analogy – with insight as the intermediate product by virtue of which data acquire value – still appears defensible. Data has no value except insofar as it is organized, or represented (e.g. visualized), or analyzed, in such a way as to lead to insight. It is in this vein that we must read this observation by internet (legal) scholar Lawrence Lessig, against the simple-minded accusation that

[5] Kashmir Hill, "How Target Figured Out A Teen Girl Was Pregnant Before Her Father Did - Forbes," *Forbes*, February 16, 2012, http://www.forbes.com/sites/kashmirhill/2012/02/16/how-target-figured-out-a-teen-girl-was-pregnant-before-her-father-did/.

[6] Although Google Flu, the Google algorithm to predict the spread of flu epidemics based on Google searches, was eventually revealed to be flawed, similar methods have been used leading to better results. See David Lazer et al., "The Parable of Google Flu: Traps in Big Data Analysis," *Science* 343, no. 6176 (March 14, 2014): 1203–5, doi:10.1126/science.1248506; David J. McIver and John S. Brownstein, "Wikipedia Usage Estimates Prevalence of Influenza-like Illness in the United States in near Real-Time," *PLoS Comput Biol* 10, no. 4 (2014): e1003581; Marcel Salathé and Shashank Khandelwal, "Assessing Vaccination Sentiments with Online Social Media: Implications for Infectious Disease Dynamics and Control," *PLoS Comput Biol* 7, no. 10 (2011): e1002199.

[7] Michael Palmer, "Data Is the New Oil."

Google is simply a *parasite* deriving value from the data of its users:[8]

> In the same sense you could say that all of the value in the *Mona Lisa* comes from the paint, that Leonardo da Vinci was just a 'parasite' upon the hard work of the paint makers. That statement is true in the sense that but for the paint, there would be no *Mona Lisa.* But it is false if it suggests that da Vinci wasn't responsible for the great value the *Mona Lisa* is.[9]

The *Mona Lisa* analogy draws attention to the fact that, just as there are *agents* who are responsible for the extraction of oil and its transformation into more commonly usable resources, there are also *agents* involved in the generation of insights (the "intermediate" product with economic value) from data (the raw resource). But does it follow that the companies doing the "hard work" of organizing and analyzing the data, justly extract all the economic value from the data that they can, given current laws?

In his recent book *Blood Oil*[10]*,* Leif Wenar has argued that, in order to ethically evaluate the choices and attitudes concerning the global supply chain of all kinds of goods and products, we must direct our attention to the institutions (e.g. property and exchange) that enable the extraction and use of raw resources and their *normative* justification. By analogy, we argue that in order to assess the *justice* of the extraction of value from data – e.g. in order to implicitly morally condemn Google by describing it as a "parasite" – we should direct our attention to the institutions

[8] Frank Pasquale, *The Black Box Society: The Secret Algorithms That Control Money and Information* (Harvard University Press, 2015), 86.
[9] Lawrence Lessig, ed., *Remix Making Art and Commerce Thrive in the Hybrid Economy* (New York: Penguin Books, 2012), 128.
[10] Leif Wenar, *Blood Oil: Tyrants, Violence, and the Rules That Run the World* (Oxford University Press, 2015).

enabling the economic agents who derive value from data to do so, and to do it so efficiently.

What are institutions? The political philosopher John Rawls introduced the concept of the "basic structure" of society, referring to "the way in which the major social institutions distribute fundamental rights and duties and determine the division of advantages from social cooperation"[11]. Rawls provides several examples of institutions that belong to the basic structure of society, such as familiar forms of taxation[12] (income or value added taxes, which are typically known in advance by each individual involved in exchanges). Other institutions of the basic structure are family law (concerning marriage and its dissolution, including obligations to provide for the offspring)[13], rules concerning the public funding of elections and restrictions to campaign contributions[14], private property and its inheritance[15], the legal principles regulating freedom of the press and access to the media, including for political organizations[16]; by analogy we may add laws concerning libel, entrepreneurship (such as corporate and bankruptcy law) and intellectual property rights.

The basic structure is, argues Rawls, the primary subject of social justice because it is the only system of norms that can achieve *background justice*. Background justice is a stable, self-sustaining system with sufficiently predictable outcomes to ground a reasonable moral evaluation. A system of rules must be

11 John Rawls, *A Theory of Justice*, 2nd ed. (Cambridge, MA: Harvard University Press, 1999), 6.
12 John Rawls, *Justice as Fairness: A Restatement* (Cambridge, MA: Harvard University Press, 2001), 51.
13 Ibid., 162–63.
14 Ibid., 149.
15 Ibid., 114–15.
16 Ibid., 111–14, 149–50.

self-sustaining in the sense that it must have a definite tendency to generate certain goods and avoid producing certain ills, that is not undermined by the cumulative effects of the individual actions enabled by it. For example, the rules of football have a definite tendency to produce certain goods (enjoyment for the viewers, athletic prowess and dexterity for the players, team spirit) that is not undermined by the individual actions of football players in the field. Football can only achieve this result thanks to "safeguard rules" (e.g. about fouls and their punishment) that limit the anti-social tendencies otherwise elicited by rules incentivizing competition. Rawls regards the basic structure of society as a similar system of rules:

> Suppose we begin with the initially attractive idea that social circumstances and people's relationships to one another should develop over time in accordance with free agreements fairly arrived at and fully honored. Straightaway we need an account of when agreements are free and the social circumstances under which they are reached fair. In addition, while these conditions may be fair at an earlier time, the accumulated results of many separate and ostensibly fair agreements, together with social trends and historical contingencies, are likely in the course of time to alter citizens' relationships and opportunities so that the conditions for free and fair agreements no longer hold. The role of institutions that belong to the basic structure is to secure just background conditions against which the actions of individuals and associations take place.[17]

The basic structure is "a shaper of actions, then, but it is also a dispenser of goods"[18]. Institutions shape actions because, just as the rules awarding victory in football, they elicit productive behavior, and enable social coordination through which goods

[17] John Rawls, *Political Liberalism*, Expanded ed. (New York: Columbia University Press, 1996), 265–66.
[18] A. J. Julius, "Basic Structure and the Value of Equality," *Philosophy and Public Affairs* 31, no. 4 (2003): 333.

can be produced, even in the absence of a central planner. They dispense goods because they also include rules affecting how the benefits of social institutions are distributed.

Rawls provides two conceptual criteria as to why the basic structure is "basic". First, it is basic in the logical sense. Justice of the basic structure logically comes *before* the evaluation of individual acts of justice. It is the way in which individual actions add up, not the individual act taken in isolation, which produces the consequences that are most relevant from the point of view of all the persons affected. For example, returning money to a villain may appear contrary to human happiness, and yet the institutions of promise and property, as a whole, tend to be beneficial[19]. The institutional view of acts can be used to justify singular acts that may appear contrary to benevolence, but are actually just. It can, on the other hand, also show why actions that appear just in isolation, actually build up to have effects that make society unjust. For example, individual exchanges of legitimately owned property between consenting adults may appear (to some) obviously legitimate and fair, in so far as they are voluntary and mutually advantageous. Only a consideration of tendencies enabled by the institution of property and unfettered exchange as a whole can reveal that the accumulated effects of such act can be to concentrate power in few hands and expose the least fortunate individuals to domination and exploitation[20]. We find again, here, an analogy with the extraction of value from oil: the undesirable long-term effects of each commercial transaction concerning oil

[19] David Hume, *A Treatise of Human Nature*, ed. David Fate Norton and Mary J. Norton (Oxford University Press, 2000), bks. 3, Part I, Sections 1-6.
[20] Rawls, *Justice as Fairness*, 53; Miriam Ronzoni, "The Global Order: A Case of Background Injustice? A Practice-Dependent Account," *Philosophy & Public Affairs* 37, no. 3 (June 1, 2009): 229–56, doi:10.1111/j.1088-4963.2009.01159.x.

and oil-derived products are not visible if one focuses on individual transactions. But the oil-centered economy as a whole – the exchange network involving different economic agents each pursuing different social and economic goals – contributes to the "resource course" of the resource-rich countries, by sustaining corrupt and violent regimes as a wholly predictable byproduct of such markets.[21]

Second, basic institutions have a "profound and pervasive influence on the persons who live under its institutions"[22]. This influence can emerge as attitudes of respect for all in democratic society or of reverence and submission in rigid hierarchical societies; it can emerge as the fact that self-esteem is grounded in independence or in being singled out for special treatments by arbitrary powers; it can emerge as a favorable attitude to risk, innovation and entrepreneurship and the appreciation of open borders. In other words, basic institutions are basic *not only* because they affect the general expectations of which goods will be produced and by whom, but also because they influence individual values, preferences, expectations, what is commonly regarded as honorable behavior, a subject worthy of discussion, and just.[23]

Having introduced Rawls's concept of the "basic structure of society", our next question is to what relation does information and communication technology (ICT) infrastructure have with it. Are ICT infrastructure *goods* or *resources* that the basic structure of society distributes? Are they *social primary goods* in the sense of the first formulation of Rawls's theory, namely goods such that it is

[21] Leif Wenar, *Blood Oil: Tyrants, Violence, and the Rules That Run the World* (Oxford University Press, 2015), chap. I and II.
[22] Rawls, *Justice as Fairness*, 55.
[23] Ibid.

rational for each individual to want more rather than less of them?[24] Our thesis is that at least *some* ICT infrastructures are themselves *institutions*. The first step in this argument, is to introduce the concept of a dominant internet platform. Having done that, we argue that dominant influence internet platforms 1) are institutions, and 2) that they belong to the basic structure of society.

To define a dominant internet platform, let us first define:

A) internet information platform: an implementation of information and communication technologies that enables, amplifies, or provides structure to the exchange of information from a given source to one or more platform user.

B) internet communication platform: an implementation of information and communication technologies that enables, amplifies, or gives structure to the exchange of information between two or more platform users.

With these two concepts in mind, we can define a dominant internet platform:

Dominant internet platform = (def)

an internet (information and/or communication) platform which:

a. enables or sustains the generation and distribution of goods of significant value

b. has a profound and pervasive influence on the life of all or most persons in society.

[24] Rawls, *A Theory of Justice*, 54–55.

We shall now argue that dominant internet (information and/or communication) platforms, as here defined, belong to the basic structure of society in Rawls's sense. There are two steps in this argument: the first is ontological, and the second is normative. The first, ontological, question concerns whether internet platforms are the kind of entities - *i.e.* institutions[25] - that can possible be considered as constituents of society's basic structure. The second, normative, concerns whether the institutions characterized as "dominant internet platforms" are sufficiently important to deserve being considered not only institutions, but elements of a Rawlsian basic structure.

Yochai Benkler analyzed the internet as an information environment consisting of three different layers: 1) the physical infrastructure, comprising, among other things, the computers and the wires connecting them, 2) the logical infrastructure, comprising all software, and 3) the third layer comprising the content that is created or exchanged by means of these infrastructures.[26] Similarly internet platforms *qua* entities populating the internet can be described as assemblages involving the three layers distinguished above, for example, Google's servers distributed in a few datacenters all over the world, the software running on these servers, and the information provided by Google users and stored in them. Is what Benkler labels "logical infrastructure" – i.e. software – the kind of entity that can be considered an institution in the Rawlsian sense, given the

[25] The definition of this term is not univocal. Clearly, here we are interested in the question whether dominant internet platforms are social institutions in the sense relevant to Rawls's definition of the basic structure.

[26] Yochai Benkler, "From Consumers to Users: Shifting the Deeper Structures of Regulation toward Sustainable Commons and User Access," *Federal Communications Law Journal* 52 (2000 1999): 561.

flexible way in which Rawls uses the term (including, that is, not only legal institutions but also social norms)?

Let us begin with the first question. Famously, Lawrence Lessig has claimed that "code is law."[27] Lessig classifies software under the broader category of *architecture*: he claims that architectures, both physical and software ones, influence people's behavior in a way that is complementary to law and social norms, for example by making certain options much easier to be taken than other[28]. Architectures differ from legal and social norms in that, argues Lessig, they do not have to be understood in order to affect an individual's behavior[29]. In our view, what software architectures of internet platforms and social norms have in common is more important than what sets them apart. Moreover, the software running digital platform is closer to law and social norms than physical infrastructure, from a very important point of view. Rule-governed behavior, which is sustained by *both* positive law and social norms, constitutes *roles*, to which duties and rights are attached[30]. For example, the rules of football constitute the role of the goal keeper. The rules of democratic politics constitute passive and active electorate. The rules of government define the function of governments and political offices. The persons who occupy roles defined by the rules of football, democratic politics, and government acquire specific

[27] Lawrence Lessig, *Code*, 2.0 (New York: Basic Books, 2006).

[28] Ibid.

[29] One can legitimately doubt whether this distinction is valid. For example, it may be argued that legal code also affects the persons who do not understand the law, in so far as these individuals can be physically coerced (e.g. by police forces, or the military) to act in ways that are compatible with the rights and prohibitions that legally apply to them.

[30] Leif Wenar, "The Nature of Claim-Rights," *Ethics* 123, no. 2 (2013): 202–29.

rights, immunities, privileges and duties, which are conditions that enable them to operate *in those roles.*[31]

The code running internet information and/or communication platforms works in a similar way: it not only creates new goods, but also new roles characterized by specific functions, attached to role-specific rights, limitations, immunities and privileges. Not only the registered user with a profile, but also the anonymous users, can be understood as roles defined *in* software and authorized to interact with information and other individuals in specific ways but not others. Some aspects of the roles operating in internet platforms are normally also defined in *legal terms* (in a platform service's terms and conditions), but what makes these norms *effective* is, in large part, their realization through the software architecture. A significant chunk of the software running in internet platforms is meant to operate an architecture of roles with specific rights and privileges attached, and at least this part of software can be appropriately considered an institution in Rawls's sense.

The above hopefully suffices to persuade the reader that software, or at least a significant part of the software operating in internet platforms, can be regarded as an institution in the sense which is relevant for Rawls's theory. The next step in the argument is to show that dominant internet platforms are not merely institutions, but constituents of the basic structure of society. There are two criteria to determine whether they are, which correspond to the two reasons provided by Rawls why the basic structure of society should be considered the first subject of justice. First, software platforms must be capable of generating and sustaining important goods, through coordinating (via

[31] Ibid.

incentives and counter-incentives) individual actions enabled by rules. Second, that they must have a pervasive influence on all or most individuals in society. The question is whether it is possible, at least in principle, for software-governed platforms to fulfill these two criteria.

We believe this is in fact a concrete possibility. A predominantly used search engine, for example, provides *structured collections* of information and enables intelligent access to it (think again about the Leonardo-paint producer analogy). Efficiently organized and intelligently accessible information on the web is an emerging benefit made possible by a multitude of disparate atoms of individual behavior channeled, incentivized, and coordinated through the software of a dominant information platform. Each individual search contributes to improving the algorithms that ranks results by relevance, by sending feedback signals the platform, the moment the customer clicks through, or discards, a search result. Moreover, the data collected can be used to produce insights: for example, individual searches may contribute to generate user profiles, that are valuable assets for e-commerce. Structured information, selective access, and insight are all essential resources in the current economy. Without these goods, citizens would drown in the information made available on the world wide web, and be unable to use it profitably, and companies would not be able to exploit any of the opportunities of internet connectivity to reach their customers.

The second criterion is that the basic structure has a profound and pervasive influence on the persons who are engaged with it. The first question to ask if it is conceptually possible for an internet platform to be dominant in this sense, or in other words, if the concept of a dominant internet platform is a contradiction in terms. This is tantamount to showing that the concept of "being an internet platform" and the concept of "being

dominant" (in the sense in question) can *conceivably* be realized by the same entity. Or in other words, we will argue that it is *at least* conceptually possible for internet platforms to be dominant.

Imagine a society in which the "ever-increasing pervasiveness of ICTs" and the "blurring of the distinction between reality and virtuality"[32] entails that information sought and exchanged online can potentially affect all spheres of social life. Thus, if all or most citizens use the same search engine in such society, the search engine can steer human behavior in a profound and pervasive way, depending on the information it shows. The first page of search results about a person, displayed on a dominant search platform will, for example, define the reputation of a person in that society, for a large swath of internet users who may never have a second chance to acquire information about her. A book or website, whose content may affect the way persons think about their own lives or their society, may disappear from the public space, by virtue of not appearing among search results, or by appearing after too many other results. If customers predominantly rely on a single search engine to seek information about goods and services, the companies serving such customers in highly competitive markets cannot simply afford to disappear from search results. It is also at least conceivable to have a society in which almost every person uses the same social networking website. In this conceivable scenario, the information distributed by the website can have deep and pervasive social and psychological effects on most individuals. By channeling personal information and allowing it to reach many persons engaged in real-life interactions with the subject, the impact of any desirable

[32] Luciano Floridi, "Introduction," in *The Onlife Manifesto*, ed. Luciano Floridi (Springer International Publishing, 2015), 1–3, doi:10.1007/978-3-319-04093-6_1.

or undesirable piece of information would be widely amplified. Violating intimacy by leaking unauthorized visual content, for instance, is always undesirable, but it must have worse social and psychological consequences if it reaches the persons most likely to affect the offline life of the victim.

Finally, we can imagine a society in which all the important decisions and opinions of people in power and people with large amounts of capital (economic, cultural, or social)[33] are communicated through a social networking website. The formal constraints of the website – the rules about how information must be conveyed in it, e.g. how short or large the message, how links between pieces of information are established and made visible – may, in such hypothetical society, have an effect on the nature of political debate.

The relevant concept of "profound and pervasive effect" on citizens can be made more precise by invoking Rawls's concept of the "two fundamental moral powers", that is to say, capacities. The first moral power is the "sense of justice", which is the capacity of contributing to defining terms of mutual coexistence and respecting them if reasonable. The second is a "conception of the good", that is the potential to pursue and revise a view of what is valuable in life[34]. A dominant internet platform is, by definition, an internet (communication and/or information) platform that affects the two moral powers of most citizens.

We have argued that an internet platform can, as a matter of conceptual possibility at least, be the sort of thing that (a) sustains the generation and distribution of goods of significant value and

[33] Mike Savage et al., *Social Class in the 21st Century*, A Pelican Introduction (London: Penguin, 2015).
[34] Rawls, *Justice as Fairness*, 18–19.

(b) has a profound and pervasive influence on all or most persons in society. How widespread the use of an internet platform must be – how dominant its position in the market it serves – for it to count as dominant, is difficult to determine precisely. In ethics and normative political philosophy we must satisfy ourselves with concepts which have fuzzy boundaries. The same is true, or so it may seem, of other institutions. A person can live as a hermit in the desert and be unaffected by the institution of property, or taxation. What percentage of the population must live as property-less hermits before property ceases to be a basic institution? We have introduced the concept of a dominant (information and/or communication) platform to capture an entity with characteristics similar to those of major social institutions considered by Rawls.

We therefore conclude that the concept of dominant internet platform is not logically contradictory and that, when they exist, dominant internet platforms belong to the basic structure of a society. In section 3, we will analyze some case-studies and argue that it is plausible to claim that some privately owned, commercially provided platforms, are dominant internet platforms in the sense defined here.

We claim that dominant internet platforms are proper *extension* of society's basic structure; they belong to it since their influence – by definition – can hardly be avoided by anyone. Because many individuals cannot help but relying on dominant internet platforms, these algorithmically organized entities – irrespective of whether they are organized as private companies, cooperatives, publicly owned companies, or some other form of institution – must be considered fundamental social institutions. If that is the case, we argue, then Rawls's principles of justice for society's basic structure applies to them. But what are these principles of

justice, and how are they justified? This will be the question of the next section.

II

Rawls's principles of justice as a framework for evaluating justice in the basic structure

Rawls's theory of justice applies to institutions forming society's basic structure. That is to say, it also applies to dominant internet platforms, if our previous argument is correct. Principles of justice provide criteria that allow one to sort institutions into just and unjust ones. Rawls's theory consists of two main principles:

> FIRST PRINCIPLE
>
> Each person is to have an equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all.
>
> SECOND PRINCIPLE
>
> Social and economic inequalities are to be arranged so that they are both:
>
> (a) to the greatest benefit of the least advantaged, consistent with the just savings principle,[35] and

[35] Rawls's "just saving principle" deals with relations of justice between different generations. We will not explore the role of this principle in the application to big data and its balance with the Difference Principle (concerning justice for a single generation). A more encompassing evaluation of the justice of internet platforms must consider the intergenerational aspect, since a lot of the value of data is not fully realized, but only potential, and therefore potentially more valuable or harmful for future generations than present ones. Thus, distributive justice question concern not only the way in which such value is distributed across members of the same generation, but also between members of different generations.

(b) attached to offices and positions open to all under conditions of fair equality of opportunity.[36]

Part (a) of the second principle is called "the Difference Principle", perhaps the most important contribution of Rawls to the history of ideas. Part (b) of the Second Principle is the principle according to which person's life chances ought to be similar, when persons have similar natural abilities and motivations (or ambitions), irrespective of the influence of their initial social class.

Rawls's justification of the two principles relies on three leading ideas. The first is that persons should be conceived as "free and equal". Persons are "free and equal" in the sense that they have enough of the two "moral powers" (introduced above) to deserve equal respect. A just society is one that protects and promotes the moral powers of all citizens *fairly*.

Rawls's second main idea is that *fairness* should be conceived as the result of *an impartial procedure*, the so-called Original Position (OP). Parties in the OP choose the basic norms of social cooperation behind an imaginary "veil of ignorance", a condition in which they ignore the specific circumstances of their society and their personal traits and circumstances. Since they *ignore* all morally irrelevant facts (e.g. facts about their individual characteristics), parties in the OP are forced to adopt an impartial

[36] Rawls, *A Theory of Justice*, 266. Rawls also argues (controversially, it turned out) that the first principle should have lexical priority with respect to the second, meaning that no infringement of the equal liberty principle should be ever tolerated as a means to realizing fair opportunity or to maximize the benefit for the least advantaged position. However, he also argues that this ordering of the principles only obtains as long as basic needs are met. Unequal rights could be extraordinarily and temporarily satisfied if strictly necessary to satisfy basic needs.

point of view. How would impartial choosers choose? According to Rawls, the two moral powers are so important, that it would be rational for a party in the OP to seek the sufficiently high level of protection for the moral powers in the worst possible circumstances. Failing to plan against the worst-case scenario in the OP is equivalent to not taking one's two moral powers seriously enough, since under the "veil of ignorance" one cannot exclude that the worst-case scenario is, in fact, the actual one. This is how equal fundamental rights are justified: one should select the right of freedom of conscience that it would be in one's interest no matter how popular one's religion happens to be in reality. This would clearly be one of equal freedom of conscience for all religions. Similarly, one would have to choose norms concerning race and discrimination assuming one belongs to the disfavored race, which would be one treating races equally, or, when equal treatment cannot be guaranteed, allowing unequal treatment that would benefit the worst off race and generate the preconditions for equality.

Let us now consider the Second Principle, concerning socio-economic justice. Here again social arrangements are evaluated taking as a guide the possibility of the worst-case scenario, which, for socio-economic justice, amounts to being a member of the group with the least opportunities and the worst expectations of income and wealth. Rawls argues that, should one select the norms that it would be rational to select in the worst-case scenario, one would not choose a principle of distribution of income and wealth that requires strict equality. Rather, one would choose a principle that justifies inequalities when (and only when) thanks to them, the expectations for the worst-off group are better than under a more equal distribution. (This possibility exists when the introduction of inequalities in the distribution of income and wealth goes hand by hand with an expansion of the resources generated by social cooperation. If a cake gets bigger

when it is divided more unequally, the smallest slice in the unequal distribution can be bigger than any equal slice.)

The Difference Principle could be interpreted as a principle requiring a form of *reciprocity* in inequality: unequal expectations are just only when there is no equal arrangement under which the least advantaged members are as well-off, as in the unequal one.[37]

In the next section, we will illustrate by means of case-studies how Rawlsian principles of justice can be applied to a Rawlsian basic structure including dominant internet platforms.

III

Are there, in fact, dominant internet platforms?

The analysis of the following real-world cases is meant to achieve two goals: first to show that some existing internet platforms are plausibly taken to be dominant internet platform in the sense stipulated above. Second, to illustrate the relevance of Rawlsian principles of justice to evaluate the justice of dominant internet platforms.

[37] What about if the benefits for the more advantaged members neither add nor detract from the benefits from the least advantaged ones? Rawls assumes that this is not likely to happen (close-knitness assumption, Ibid., 71). If close-knitness does not obtain, different interpretations of the Difference Principle are possible (and justifiable in the context of other Rawlsian claims), depending on the different emphasis placed on the idea of reciprocity or the Original Position argument. See Philippe Van Parijs, "Difference Principles," in *The Cambridge Companion to Rawls*, ed. Samuel Richard Freeman (Cambridge, U.K.; New York: Cambridge University Press, 2003), 200–240.

Political speech on YouTube

Towards the end of September, 2017, MEP Marietje Schaake uploaded a series of videos on YouTube concerning the debate in the Parliament on the new law on European trade for good that are used in torture and the death penalty. According to the MEP, YouTube removed one of her video with a recording of the opinion of the Commissioner for European Trade, Cecila Malmström. YouTube's reasons for removal was that the video was "flagged for review" by other users and that YouTube determined that YouTube Community Guidelines were violated.[38] MEP Schaake filed a "video appeal", where she had to argue in one sentence why the video needed to stay up.[39] After she publicized the incident through Twitter[40], Google reached out to one of her parliamentary assistants to smooth it out and revert on the decision. The video was back online after four hours.

This case illustrates how the combination of software, terms of use, and social norms, powered by an internet platform (YouTube), enables a new form of control of political speech. In this case, YouTube's software-mediated practices and their

[38] "Community Guidelines - YouTube," accessed October 26, 2016, https://www.youtube.com/yt/policyandsafety/communityguidelines.html.

[39] "When YouTube Took down My Video," *Marietje Schaake*, accessed October 26, 2016, https://www.marietjeschaake.eu/en/when-youtube-took-down-my-video; "YouTube Takes Down European Parliament Video On Stopping Torture For 'Violating Community Guidelines,'" *Techdirt.*, accessed October 26, 2016, https://www.techdirt.com/articles/20161006/00445835727/youtube-takes-down-european-parliament-video-stopping-torture-violating-community-guidelines.shtml.

[40] Marietje Schaake, "Danger of Automated Content Removal: YouTube Took down My Video of the Anti-Torture Debate in the European Parliament!," microblog, *@MarietjeSchaake*, (October 5, 2016), https://twitter.com/MarietjeSchaake/status/783699031746867204.

policies about content removal inadvertently or intentionally helped a crowd silence a parliamentarian who was posting about democratic discussions of torture. The case illustrates both the potentially deep and wide-ranging impact of an internet platform (which makes it dominant according to our definition) and how the Rawlsian Theory of Justice can be saliently applied to it.

YouTube is a dominant platform because it can have a significant influence on the moral power of *reasonableness* of citizens – their capacity to judge what is just and unjust. Whether a content is accessible or not on YouTube can have far reaching consequences: according to the company itself, it has over a billion users and reaches more 18-34 and 18-49 year-olds – a significant fraction of the electorate – than any cable network in the U.S[41]. Possibly the statistics concerning Europe are not that different. If users in this cohort remain faithful as they grow older and new cohorts replicate the same use patterns, the overall reach and influence of the platform is going to grow. The content of the video involves a textbook definition of political speech, which is a kind of speech that can have a widespread and profound effect on everyone, by affecting a society's *public* decisions. It could be argued that decisions concerning content on YouTube affect everyone in society, or almost so. First of all, even non-users can be indirectly influenced by opinions formed by accessing YouTube, via their social connections to non-users. Second, if the content available (or not) on YouTube affects the public conversation about public issues it can influence political decisions that are binding to all. If YouTube can affect everyone in society, also the non-users, and if it can affect the way in which

[41] "Statistics – YouTube," accessed October 26, 2016, https://www.youtube.com/yt/press/statistics.html.

citizen's sense of justice operates, then it qualifies as a dominant internet platform based on our definition.

Napalm Girl and Facebook

"Napalm Girl" is widely regarded as the most iconic documentary photograph of the Vietnam war, including a naked 9-year-old Kim Phúc running away from a Napalm attack. Norwegian author Tom Egeland, working for the newspaper Afterposten included this picture in the context of a display of seven photographs that changed war history. Facebook promptly removed the picture, since it shows Kim Phúc's naked genitals, in violation of Facebook's Community Guidelines. Subsequently the editor of Afterposten wrote an open letter to Facebook that circulated widely among media outlets and on the blogosphere. Erna Solber, the Conservative prime minister of Norway, voiced criticism on Facebook's choice on Facebook itself. Facebook reverted its previous decision, which pointed out at the difficulty of distinguishing between different instances of posting photographs of nude children, the day after the publication of the open letter.[42]

[42] Espen Egil Hansen Sjefredaktør, "Dear Mark Zuckerberg. I Shall Not Comply with Your Requirement to Remove This Picture.," *Aftenposten*, accessed October 26, 2016, http://www.aftenposten.no/article/ap-604156b.html; NTB, "Norsk Forfatter Midlertidig Utestengt Fra Facebook Etter å Ha Postet Bilde Fra Vietnamkrigen," *Aftenposten*, accessed October 26, 2016, http://www.aftenposten.no/article/ap-603854b.html; Julia Carrie Wong, "Mark Zuckerberg Accused of Abusing Power after Facebook Deletes 'Napalm Girl' Post," *The Guardian*, September 9, 2016, sec. Technology, https://www.theguardian.com/technology/2016/sep/08/facebook-mark-zuckerberg-napalm-girl-photo-vietnam-war; "Erna Solberg - Diary," accessed October 26, 2016,

Plausibly enough, the emotional graphical content posted on Facebook (a child running away from the horrors of war) can be considered as an example of political speech of the kind that can contribute to the development of the sense of justice in the citizens. Afterposten is not an individual but a company that has with Facebook a commercial relationship, presumably regulated by a contract that secures very explicitly Facebook's entitlement to apply its policies on the content transiting through its platform. Here we see another aspect of Facebook dominance. As the most widely used social network in many countries, it is not a platform where any newspaper of high-income countries can afford *not* to be. News outlets such as Afterposten, operating in a competitive environment, can only avoid Facebook at great risk for themselves.

Breastfeeding and Facebook

Finally, Facebook image censorship guidelines, leaked in 2012,[43] revealed that images of breastfeeding had to be taken down by moderators if the nipples were exposed. Facebook's

https://www.facebook.com/ernasolberg/posts/10154351913481832; James Temperton, "Facebook Makes U-Turn on Decision to Censor an Iconic Vietnam War Photo," *WIRED UK*, accessed October 26, 2016, http://www.wired.co.uk/article/facebook-terror-of-war-vietnam-napalm-girl-image-censored; Sam Levin and Julia Carrie Wong Luke Harding in London, "Facebook Backs down from 'Napalm Girl' Censorship and Reinstates Photo," *The Guardian*, September 9, 2016, sec. Technology, https://www.theguardian.com/technology/2016/sep/09/facebook-reinstates-napalm-girl-photo.

[43] Charles Arthur, "Facebook's Nudity and Violence Guidelines Are Laid Bare," *The Guardian*, February 21, 2012, sec. Technology, https://www.theguardian.com/technology/2012/feb/21/facebook-nudity-violence-censorship-guidelines.

nipple policy could be charged of intentionally or inadvertently supporting corporate interests threatened by breastfeeding (e.g. powder milk industry), in so far as it limits the users' exposition to pictures of woman breastfeeding. This may have an influence on women's choices with respect to whether to breastfeed in public, or indeed breastfeed at all, and on their partners' motivation to support them. Second, it sends all kinds of messages about gender role, in so far as men's nipples, but not women's, are permitted.[44] Thus, the combination of Facebook software (for signaling content) and moderation rules is an institution of social cooperation with the power to influence the conceptions of what is good, appropriate, dignified (the second moral power, of "rationality") of many individuals in societies where Facebook usage is widespread.

We conclude that Facebook has the power to impose rules of social cooperation to significant portions of society. It achieves this influence through different stages. First, it affects those people who, due to their life goals, cannot afford *not to use* Facebook. The rules of the platform are – from the perspective of these persons – take-it-or-leave-it social institutions just as the rules of propriety and taxation. They are rules *shaping* their choices and *distributing* goods to them. Arguably, they are even *more* take-it-or-leave-it than rules of property and taxation since, to change the latter, constitutionally approved and familiar institutional mechanisms to change the institutions democratically exist. Second step: a platform like Facebook extends its influence to the rest of society because its users are a significant proportion of the total population and are enmeshed across all layers of

[44] Amar Toor, "Facebook Still Has a Nipple Problem," *The Verge*, October 12, 2016, http://www.theverge.com/2016/10/12/13241486/facebook-censorship-breast-cancer-nipple-mammogram.

society. By virtue of this social connectedness, Facebook content moderation choices affect the public culture and the behavior of non-users as well. A proof of Facebook's influence *outside* the *private* realm of active Facebook users is the large number of cases involving Facebook that are discussed *outside* Facebook (e.g. on the news).

If Facebook and Youtube are dominant internet platforms, in many societies, then, they belong to the basic structures of those societies. Rawls's Principles of Justice determine the justice of the basic structure, including the Facebook and YouTube platforms. We propose to analyze YouTube and Facebook as institutions to which the principle of the equal liberties applies. If that is the case, Facebook must guarantee equal protection of freedom of speech.

Do YouTube and Facebook protect equality of freedom of speech? The above mentioned cases suggest that they rules create roles and opportunities for the exercise of arbitrary power, that end up conferring advantage to some parties to the detriment of other parties, inadvertently or intentionally. These roles are: a) the role of decision-makers in the company with the authority to dictate internal guidelines for removing online content, b) the role of the employees who must apply these guidelines, c) the role of the platform users who can notify alleged violations of the community guidelines. Each role plays a specific function and has specific rights and authorities attached to it. In fact, the platform policies about speech are decided non democratically, exercised mechanically and yet somehow arbitrarily, and provide poor protection of a the right to appeal against such decisions.

Those who have designed the platforms, have not done so with the goal of protecting the ability of the users to challenge the platform decisions *to a degree compatible with the protection of their moral powers*. They have designed the platform to be compatible

with user satisfaction, which is necessary for profit (but only necessary to an extent actually modulated by the platform's true dominance). User satisfaction and protection of the two moral powers are two different goals. There is no *a-priori* guarantee that the level of user satisfaction that Facebook needs, in order to be profitable, will be achieved by protecting everyone's freedom of speech equally.

In fact, as the above analysis show, the existing rules appear to confer more opportunities of communication to the weapon industry, the artificial milk industry, and those who think that showing female breasts in public is necessarily inappropriate, than to the persons opposing those views.

We argue that, as a society moves online, the social norms and positive laws that were sufficient to guarantee equal freedom of speech *in the absence of the dominant internet platforms* can no longer be relied to fulfill this function. Existing safeguards – positive laws and social norms concerning speech and its regulation – have a limited reach in the new world of internet-based institutions. Constitutional rights may be framed ambiguously which makes it difficult to invoke them to protect online freedom of speech. Existing judicial procedures may have very uncertain outcomes and therefore be too difficult to enforce.

The enforcement problem is a particularly serious one. Take the MEP Schaake case first. The story has a kind of happy ending with a tweet storm reaction and the overturning of the initial verdict from the moderators. But a less prominent (and affluent) user who may easily be victim of a similar violation would neither be able to engage the Twitter people to stir public uproar, nor to sustain a potentially burdensome court case against YouTube.[45]

[45] Moreover, Twitter could be purchased by the same company that owns

In the Napalm Girl case, again, Facebook arrives at a reasonable and timely judgment, but only after a significant reaction by the media and politics. Such reaction could be achieved by an established news outlet (an entity, almost by definition, with an above-the-norm capacity for public communication). But for all we know, there might have been many similar cases, involving ordinary Facebook users, that we have never heard of, simply because no response was elicited, and the decision of moderators was passively accepted. However, being a newspaper also exposes the agent in question to a particular vulnerability. Relationships between newspapers and Facebook are regulated by commercial contracts. The possibility to exercise data protection rights in the courts, while economically feasible for a newspaper, may be in this case be restricted by commercial clauses consented to.

IV

Inequalities generated by the internet

Economic inequality in big data

Internet is nowadays dominated by large companies, producing and controlling a huge amount of personal data as a collateral effect of providing their services through the internet. The technological innovations responsible for this are mainly the

YouTube. Existing laws are unlikely to prevent such possibility specifically. Current competition and antitrust laws (on either side of the ocean) have a different rationale (consumer welfare) and are not applied for the purpose of protecting the constitutionally enshrined value of freedom of speech. We believe our arguments show that the purchase of Twitter by Alphabet or Facebook would be a threat of freedom of speech, but it is unclear whether a constitutional judge (on either side of the ocean) would see it in this way. Yet the substantive implications for freedom of speech are clear.

Internet and the smartphone, which provide access to a wide variety of services, such as maps, blogs, videos and internet searchers, every day, 24h a day, in real time, globally. As a side-effect of interactions between platform companies and their customers, formidable amounts of data are collected.

The data produced and controlled by platform owners are considered a "new asset class".[46] The ability to control and derive benefits from such assets is marked by significant inequalities. There is an inequality in the ability to *collect and control* these data, as the dominant internet platforms are uniquely positioned to do so. This unique position derives from the combination of different network effects that make it difficult, if not impossible, to compete against the first company that starts to benefit significantly from them. For example, it is hard to compete against Facebook offering the same product, if you start with a hugely inferior user base. For the number of users in the network – the number of potential "friends" you can reach adds value to the service provided.[47] Google search benefits from a host of interlocking network effects: marketplace network effects

[46] World Economic Forum and Bain & Company, Inc., "Personal Data: The Emergence of a New Asset Class" (World Economic Forum, 2011).

[47] It might be objected that Google may soon face serious competition by Bing, the Microsoft powered search engine. This is the kind of exception that proves the rule: few companies are able to sustain the huge losses that Microsoft suffered for several years in order to get a chance to compete with Google, and even in this case the possibility of competition only exists because Microsoft can exploit market dominance in another market, that of operating systems. See, By Robert Cyran, "Microsoft Ought to Kick off Search for Bing Buyer," *Reuters Blogs*, accessed April 4, 2016, http://blogs.reuters.com/breakingviews/2011/07/22/microsoft-ought-to-kick-off-search-for-bing-buyer/; Seth Fiegerman, "Microsoft's Bing Search Engine Is Actually a Success," *Mashable*, accessed April 4, 2016, http://mashable.com/2015/06/30/bing-not-losing-money/.

(advertisers affiliated with Google can access to the best profiled individuals, while each individual advertiser contributes its bit to the profiling), data network effects (if you have more data, you can more easily build a richer ecosystem of better services around each person), recruiting network effects (particularly on social networks, a larger user base attracts even more users), and feedback network effect (the behavior of users tells Google which search results are selected after typing a given search key - thus helping Google to identify the most fitting search results).[48] Due to these network effects, many markets of internet services (e.g. the search or social network markets) tend to be winner-takes-all.[49]

Google allows the activities of social cooperators to generate and distribute goods (intelligently organized information, insights, customer profiles), that would not exist independently of it and of the actions of individuals it enables, which is a typical feature of a dominant internet platform. These goods are then converted into wealth for some (through the legal mechanisms of intellectual property ownership), and opportunities for others. Second, Google has a profound and pervasive influence on the life of all or most persons in society. In many countries, Google is by far the most widely used search engine. Hence, it has the capacity to affect the reputation of individuals and commercial success of companies, as the "imaginary" platform introduced in

[48] This asymmetric relationship between those who collect, store and mine data and their targets is sometimes referred to as the "big data divide". See Mark Andrejevic, "The Big Data Divide," *International Journal of Communication* 8 (2014): 1673–1689.

[49] See also Loi, M., P. Dehaye, and E. Hafen, "Towards Rawlsian "property-owning democracy" through personal data platform cooperatives", submitted manuscript.

section 1. If that is correct, the Second Principle of Justice applies to Google. What are the implications of this fact?

The first is that Google is bound to respect the principle of *Fair Equality of Opportunity*. The original Rawlsian principle applies to persons and their chances of success. Arguably, however, the Fair Equality of Opportunity principle should also apply to *business*, also because behind businesses there are persons, who are largely affected by the success or lack of success of businesses. The internet version of the Fair Equality of Opportunity principle would be based on the following equivalence

Individual's chances of success	→	companies' chances of success
Initial position relative to social class	→	position relative to the economic interests of dominant internet platforms
Similar talents	→	similar potential profitability
Similar ambitions	→	similar ambitions

Fair Equality of Opportunity for companies on the web, then, is the claim that:

> Equally ambitious and potentially profitable companies should have similar chances of success, irrespective of their relation to the economic interests of dominant internet platforms.

The principle in question is a plausible requirement of fairness in commercial competition for companies in societies where a single internet platform dominates the search market. Customers have an interest to obtain services from companies that meet their needs and expectations; they do not have an interest in

solidifying the dominance of the dominant search engine. Moreover, the success of a company (and derivatively, of the persons who lead it or work on it) must not depend on its positive contribution to the solidification of entrenched players. Such a dependency would run afoul of Fair Equality of Opportunity, which is interpreted (by Rawls himself) as incompatible with the concentration of economic assets and powers in few hands, and requires anti-monopolistic measures[50]. That, of course, does not mean that Google should not charge for the ads it sells, that also appear on its search result page. Arguably, companies with similar potential profitability and similar ambitions (that is to say, operating in the same markets) normally have similar chances to buy ads. The real issue of justice concerns a company's rank in the *organic* (that is, the unpaid) search results, those that are not for sale and that, for that reason, appear to be "meritocratically" assigned. For dominant internet platforms, realizing Fair Equality of Opportunity means an obligation to provide a level playing field for all companies competing for their users' attention, without preferential treatment to own or allied companies and strategic handicapping of potential competitors. It is worth mentioning that some have accused Google of failing precisely on that count. Frank Pasquale's *The Black Box Society* reports the allegation of Foundem, a UK company specialized in price comparisons.[51] The uncontroversial facts of the case are the following: six months after its launch, Google blocked Foundem from appearing in its organic search results. Google and Foundem provide different justifications for this: according to Google, its algorithm had classified it as " 'a low-quality' site, composed mainly of links to

[50] Rawls, *A Theory of Justice*, 243 and 246.
[51] Pasquale, *The Black Box Society*, 67.

other sites"[52]. According to Foundem, Google did not come to such assessment based on impartial criteria. Foundem's preferred explanation is that:

> If Google has no interest in an area, it will let an upstart be. But once it enters (or plans to enter) the market of a smaller finding service, it downranks that service to assure the prominence of its own offerings. (Major incumbents are not displaced lest their users revolt, so they usually retain their access to prime real estate.) If the smaller engine is a potential acquisition target, Google has another interest in suppressing traffic: to discourage its hope of succeeding independently. Like Pharaoh trying to kill off the baby Moses, it denies its rival the chance to scale. When a would-be purchaser controls significant access to its target's potential customer base, overtures of interest are offers that can't be refused.[53]

Let us suppose that Foundem's allegations, as reconstructed by Pasquale, are true[54]. We could explain the resulting injustice by

[52] Ibid.

[53] Pasquale, *The Black Box Society*.

[54] The recent fine levied against Google in the EU antitrust case (that Google will appeal against) is based on evidence of this kind of behavior. See Nicholas Hirst, "Wanted: Expert to Monitor Google's Algorithm for €10 Million," *POLITICO*, June 29, 2017, http://www.politico.eu/article/wanted-expert-to-monitor-googles-algorithm-for-e10-million/. Notice that Facebook has been brought to court by an app company for allegation of a similar anti-competitive behavior. The former startup Six4Three maintains that Facebook used its power to grant or deny access to its customers' personal data as a threat at the bargaining table with companies, such as Six4Three. Allegedly, Facebook's command over the data of roughly one third of the world population allowed its managers to terminate the business of unwanted competitors, if they wanted to, or buy them at below market price, or to force them to purchase undesired commercial services from Facebook, such as sponsored ads on its mobile platform. See Cadwalladr, Carole, and Emma Graham-Harrison, "Zuckerberg Set up Fraudulent Scheme to 'weaponise' Data, Court Case Alleges." *The Guardian*, May 24, 2018, sec. Technology. http://www.theguardian.com/technology/2018/may/24/mark-zuckerberg-

appealing to the (modified) Fair Equality of Opportunity Principle. Seen as an institution, Google search includes two social roles with a potential conflict of interest: Google owners and search *subjects* (in this case, the company Foundem). The first role aims to protect and strengthen Google's market share, while the second aims to reach their customers, and these two goals may not be aligned.

If Google is a dominant internet platform then, according to our argument, there are limits to the extent that it can promote its own commercial interests. Not all means would be permitted: the company owning the dominant internet platform could only maximize its own profits through strategies constrained by the prior principle of justice of Fair Equality of Opportunity. Google – as the company that owns an arguably dominant internet platform – should arguably be prohibited to pursue its own commercial objectives by reducing the chances of success of a potential competitor.

So far, we have analyzed justice in the dominant (search) internet platform in terms of the relationship between a particular set of *search subjects* (namely, companies) and the platform *owners*. Let us now turn to the relationship between the two roles of *owners* and *users* and let us consider the question of *income and wealth inequality*, the subject of Rawls's *Difference Principle*. We must consider the roles created and sustained by Google search – regarded as an institution – in relation to how income and wealth are distributed between them. Google owners include a small number of owners with a significant proportion of the shares, who are extremely wealthy, and a large number of owners each owning few shares, who are predominantly middle- or high-

set-up-fraudulent-scheme-weaponise-data-facebook-court-case-alleges.

income citizens with a capacity to save and invest in a public company, such as Google. On the other hand, there are the Google users, including everyone with a computer or a smartphone with internet connection, which is to say, excluding perhaps a significant proportion of elderly citizens, virtually everyone in societies where internet usage is widespread. Google users presumably have, on average, lower expectations of income and wealth than Google owners. Moreover, Google contributes to reinforce this inequality in so far as the distribution of benefits from that is concerned. The way Google does this is by extracting economic value from user-provided data and converting it to profits that are then paid to the owners of its shares.

Notice that Rawls' Difference Principle is actually *not* violated because Google's *owners* are, as a group, much better off than Google's *users* and Google, as an institution, contributes to reinforcing such inequality. In order to show a violation of the Difference Principle, more elements are needed. Justice, for Rawls, is not synonymous with the equal distribution of income and wealth. Rather, according to Rawls's Difference Principle, the inequalities produced by the internet can be considered *just* if they cannot be removed without making least advantaged individual worse off in absolute terms. Rawls's *Difference Principle* is only violated if Google users would be at least equally well off with services analogous to those offered by Google but provided within an alternative set of institutions, distributing the economic value of data more equally. Thus, Rawls's Difference Principle directs our inquiry to assess the following empirical question: are there possible institutional/technological arrangements that can provide effective search services while generating more equal expectations of income and wealth from the data, in which the expectations of the search engine users are not *worse* in absolute terms? If the only way to achieve a more equal distribution of wealth from data were to deprive consumers of the highly

valuable service for searching information Google provides, making their expectations worse off in absolute terms, Google-sustained inequality would be justified. If alternative arrangements are possible, where consumers have *both* access to valuable search services and where users are equally or better off than they are today thanks to alternative ways of distributing wealth from data, than the Google dominant platform for search is unjust, in that it violates the Difference Principle.

At this stage in our argument, we lack the empirical information necessary to assess the truth of the above claim. Our purpose here is *conceptual,* not *empirical,* i.e. to reflect about the kind of *criteria* that ought to govern the assessment of justice in the extraction of value from data. What could greatly help a scientist's ability to assess the Google dominant platform from the point of view of the Difference Principle is research about, and implementation of, *alternative institutions for governing data provided by citizens in the search market*.

This is a field for interdisciplinary inquiry in which exciting innovations are taking place. Consortia such as the MyData movement,[55] data cooperatives such as Healthbank[56] and MIDATA.coop[57] are proposing innovations in both corporate governance and software systems. In alternative institutional arrangements, search services would not be allowed to collect data about their users to redeploy them for any purpose, except

55 "Homepage," *MyData 2016*, accessed August 24, 2016, http://mydata2016.org.

56 "Healthbank Innovation Ag, Baar," accessed May 16, 2016, http://www.moneyhouse.ch/u/healthbank_innovation_ag_CH-170.3.039.845-6.htm.

57 "MIDATA.Coop | My Data - Our Health," *Midata*, accessed May 16, 2016, https://www.midata.coop.

those strictly necessary to provide, monitor and improve their services. Individuals would have a legal right to demand and obtain a copy of all the data collected about them by internet services in a usable form[58]. In this way, data could be returned from dominant internet platforms to their users and controlled by users directly. Ordinary citizens would be empowered to derive value from data by new kinds of institutions, such as data aggregators and personal data management systems. These systems could be owned by internet users cooperatives such as Healthbank and MIDATA[59], or technological start-ups with a different business model from the currently prevailing one, which consists in accessing as much user data as possible. These companies would develop business models in which they act as intermediaries or facilitators, that enable the internet user to control their data and profit from the data (for instance by pooling together the data of many individuals, in a way that is nowadays only achieved by providers of popular online services).

[58] Arguably, the coming European Data Protection Regulation goes some steps in this direction, in particular by virtue of the principle of *data portability* (Art. 20). See "Regulation on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data, and Repealing Directive 95/46/EC (General Data Protection Regulation 2016/ 679)" (2016), http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2016.119.01.0001.01.ENG&toc=OJ:L:2016:119:TOC. Yet, the data portability principle does not really extend to the majority of data that internet companies are nowadays able to record and process, as it tries to balance the rights of the data controllers. It is also unclear whether it can be leveraged by consumers and companies to undermine the current hegemony as data collectors of large providers of services, or if it could even further entrench their dominance by selectively choosing beneficiaries of this portability.

[59] E. Hafen, D. Kossmann, and A. Brand, "Health Data Cooperatives – Citizen Empowerment:," *Methods of Information in Medicine* 53, no. 2 (February 11, 2014): 82–86, doi:10.3414/ME13-02-0051.

These technological and governance innovations could empower individuals to bargain, individually or collectively (in the case of the cooperative model), their own data with services or even income, in a way that is more informed and transparent. In this alternative data economy, providers of search or social networking services would lose most of their capacity to extract value from the data of their users and would have to change their business model into one in which they are paid for their services, either by individuals or cooperatives of internet users. But internet users would, for example, be able to derive income from their data, and after using some of this income to pay the services that used to be offered for free, they would totalize a net gain, on top of more agency in the overall data economy.

Developments in this area are exciting. They suggest that there could be alternative arrangements, both legal and technological, able to sustain a tendency to equality, as opposed to the tendency to inequality promoted by a company like Google. Still, in this moment we do not know whether these alternative arrangements would really work and whether internet users would be better off, under them, then they are now, from the point of view of the Difference Principle.

If the argument in this paper is correct, these developments are important not only because they are innovations, but also because they contribute to our normative knowledge. Given the way the Difference Principle works, we need to compare the present state of affairs to alternative possible arrangements in the data economy, in order to be able to assess whether the existing level of inequality they support is justified (because the least advantaged group would be worst off without it) or not justified (because a more egalitarian distribution that does not compromise expectations for the worst off group is possible).

V

Conclusion

The initial question of this paper is how to assess justice in the extraction of value from data. We start by assuming that the extraction of value from data is just, when the institution that enable this activity are just. We defend the following theses:

1. that software should not be regarded simply as a *distribuendum* of justice, but rather as a social institution;
2. that *dominant internet platforms*, human-software assemblages formed by software, legal arrangements, and the social norms constraining the behaviors of their users, are institutions of society's basic structure;
3. that *dominant internet platforms* ought to fulfill principles of social justice;
4. that YouTube, Facebook, and Google Search are plausibly considered (relative to their position in many societies) dominant internet platforms;
5. that YouTube, Facebook and Google Search are *unjust institutions*, if they violate Rawls's Two Principles of Justice;
6. that there are indications that YouTube, Facebook and Google search may violate these principles.

Depending on the strength of considerations for thinking that these platforms are indeed dominant ones according to the definition provided and of considerations for thinking that they fail to satisfy the Rawlsian two Principles of Justice, we may come to the conclusion that these platforms are *unjust institutions*. If that is in fact the case, the extraction of value from data of these companies can be considered *unjust*.

Our examination of the justice of these concrete internet platforms must be understood as a "proof of concept" of the approach, but could not provide definitive results. There are elements in support of the idea that YouTube and Facebook at the moment do not deliver equal protection to the freedom of speech of their users, but it could be objected that these platforms are not dominant enough, or that they provide sufficient guarantees of impartial treatment to their users. We have also mentioned allegations that Google Search violates the "internet Fair Equality of Opportunity Principle" but, due to the opacity of Google Search ranking criteria, it is hard if not impossible to obtain conclusive evidence[60]. Finally, we cannot determine if the Difference Principle is violated until we achieve a more solid understanding of the expectations of the least advantaged groups under alternative arrangements of digital rights and alternative forms which the data economy could take. At least three direct policy implications follow from this analysis:

1) legal scholars and constitutional judges cannot ignore the right to equal protection of freedom of speech expressed in the spaces provided by dominant internet platforms;

2) more transparency is needed to assess whether dominant internet platforms violate Rawlsian Principles of Justice. Or in other words, justice provides an argument against *opacity*;

[60] Due to this opacity, the Directorate-General for Competition of the EU has recently opened a 10M Euros tender for expertise to help evaluating "processes and methods determining the display and positioning of generic search results" and "paid search results (such as online search advertising)". See European Commission Directorate-General for Competition, "Framework Contract for Services Number — Comp/2017/012," February 2016, 16, https://etendering.ted.europa.eu/cft/cft-document.html?docId=27863. See also Hirst, "Wanted."

3) governments and societies ought to promote initiatives to rethink and revolutionize the way the data economy operates.

Only then we will be able to determine whether the distribution of income and wealth engendered by existing dominant platforms is just or unjust.

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